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COMMITTEE OF EXPERTS ON THE TRANSPORT OF DANGEROUS GOODS

Sub-Committee of Experts on the Transport of Dangerous Goods
(Fifteenth session,
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agenda item 3 (b))

PACKAGINGS AND IBCs

Test requirements for plastics packagings and IBCs

Transmitted by the Observer of Finland

1. Introduction

The fact that many materials become brittle at low temperatures also applies to plastics packagings and IBCs. Predominantly, plastics packagings and IBCs are manufactured of high density (HD) polyethylene.

In the northern areas the climatic conditions are so hard that this should be taken into account in designing and testing packagings. To check the cold resistance of certain plastics packagings the Ministry of Transport and Communications in Finland has had tested more than twenty jerrycans made of HD polyethylene and produced by various manufacturers in Europe. The drop tests carried out at different temperatures showed that those products which were broken at -40 °C also did so at -18 °C.

Thus, if the packagings are made of HD polyethylene their cold resistance is high enough also in cold circumstances. The differences in durability are based on the design and the manufacturing technology of these packagings.

However, packagings made of HD polyethylene may have some equipments e.g. closures or caps manufactured of some other plastics which are less cold resistant. Most other plastics which can be used as raw materials for packagings and IBCs do not withstand cold climate, but they become brittle. Consequently the cold resistance of all packagings and IBCs is important in the transport of dangerous goods. Finland proposes following amendments in the texts of UN-Recommendations on the Transport of Dangerous Goods:

2. Proposals

2.1. Packagings

Insert the following new texts at the end of 6.1.5.3.2 (special preparation of test samples for the drop test):

> "The climatic conditions in the country of transport may require drop test at a lower temperature than -18 °C for the plastics packagings others than those made of HD polyethylene."

Insert the following text at the end of 6.1.3.1 (marking):

> "(h) The degree of the temperature, if the drop test has been done at a lower temperature than -18 °C."

2.2 IBCs

Insert the following new texts after 6.5.4.9.2 (c):

> "(d) The climatic conditions in the country of transport may require drop test at a lower temperature than -18 °C for the plastics IBCs others than those made of HD polyethylene."

Move existing (d) to (e).

Insert the following text at the end of 6.5.2.1:

> "(i) The degree of the temperature, if the drop test has been done at a lower temperature than -18 °C."